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PRACTICAL REMARKS
ON
BELFRIES AND RINGERS:

WITH AN
APPENDIX ON CHIMING.

With Illustrations.

BY
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PREFACE TO FOURTH EDITION.

Nearly thirty years have elapsed since this brochure was first published, during which time, most happily, greater attention has been paid to our belfries and ringers, so that in many cases, such stringent rules as those printed in the first edition are not at all applicable; but they are republished as a record of the days of evil, and also for use in places where reform has not yet taken place. Speaking now from experience, no written rules are required—none but such as are in accordance with the etiquette of good society.

In a well ordered belfry, where scientific change ringing is the practice, the following are sufficient—

Ears open ; Eyes wide ;

Feet steady ; Tongue tied.

Yet, even in well conducted belfries, written

rules may be advisable as a protection to the ringers against outsiders, who might intrude themselves and be an annoyance.

In this edition I have substituted the word "Ring" instead of "Peal," it being the more correct and ancient term for a set of Bells. PEAL applies to the work done with any set of Bells.

H.T.E.

June 29th, 1878.

APOLOGY FOR BELLS.

"Some, perhaps, may wonder why any one should thus trouble himself about so low and mean a subject as this is generally thought to be; but I think nothing mean or low, that hath any relation to the Service of God and His Church."—*Bp. Beveridge, Tract on Psalmody, Edit. 1710.*

"Bells reconcile man with man, and unite divers members into one body and tighten its cords by mutual good will and sympathy."—*Translation from an Essay on the Symbolism of the Bell, 1859.*

"An old Bell by its inscriptions, its medallions, and its ornaments, relates the history of the past better than a mutilated stone."—*Translation from M. Pardiac's Notice about the Bells of Bordeaux, 1858.*

"I don't know that one could choose any of man's inventions which has more various and touching associations than a Bell, and certainly Church Bells must take a leading place in the great poem that might be written on them."—*Sir S. H. Northcote, Nov. 4, 1873.*

Therefore, to quote an elegant passage from Cicero:

"Quis mihi jure succenseat, si quantum cæteris ad res suas obeundas, quantum ad festos dies ludorum celebrandos, quantum ad alias voluptates conceditur temporum, quantum alii tribuunt tempestivis conviviis, quantum denique alere, quantum pike; tantum mihi egomet ad hæc studia recolenda sumpsero?"—*Cicero, pro Archia Poeta.*

Not, however, forgetting Cicero's quotation from Plato:—

"Non nobis solum nati sumus, ortusque nostri partem patria vindicat, partem parentes, partem amici."—*Cicero de Off., lib. i. c. vii, § 22.*

OPINIONS OF THE PRESS.

“The revived interest in all ecclesiastical studies has extended to Bells, and the researches of Mr. Ellacombe are worthy fruits of this newly awakened spirit.”—*Quarterly Review*, No. cxc, p. 308.

“The Rev. H. T. Ellacombe, Rector of Clyst S. George, Devon, has published PRACTICAL REMARKS ON BELFRIES AND RINGERS, and an APPENDIX ON CHIMING. (Bell and Daldy). These are exceedingly sensible and judicious; and we should be glad to hear that they were circulated extensively. The author holds it to be essential for the proper arrangement of a belfry, that the ringers should be paid out of an Endowment Fund. The Appendix is illustrated by some useful descriptive plates of the method of hanging bells, and of contriving chimes.”—*Ecclesiologist*, Vol. xxi, p. 119.

“Mr. Ellacombe’s brochure on “Belfries and Ringers” still remains, in spite of some rivals, the standard treatise upon the subject. It is full of practical knowledge of country parishes, and sensible appreciation of their peculiar difficulties. The rules for ringers seem to us quite a model of homely good sense; and the pamphlet is distinctly one that we can recommend.”—*Literary Churchman*, 18th November, 1876.

PRACTICAL REMARKS
ON
BELFRIES AND RINGERS.

Reared in a country parsonage, and close to a ring of eight bells, as musical and as well rung (unscientifically) as any in the kingdom, it has been my lot from childhood to have seen much of the practices in a country belfry. They had better, I grieve to say, be passed over in silence ; for such things as I remember to have seen and heard would hardly be tolerated in a village alehouse ; and yet the ringers were considered respectable, honest men in their way, and had the honour—many of them—of being the ringers of the Cathedral bells in the adjoining city, where fifteen men were required ; and it was a well-known fact that, as a body, a more drunken set of fellows could not be found. It is painful to me even to allude to such ungodly practices : I mention the fact, in the hope that it may perhaps call the attention of those in authority to this crying evil, which exists more or less in every parish and belfry in England ; for I fear it may be too truly said, “*Ex uno disce omnes* ;” and how dreadful it is to think of such conduct in a church, if perchance (as formerly no doubt was universally the case) the ropes hang

down to the pavement of the ground floor. It is therefore high time —especially in these days, when so many efforts are made to restore a better discipline, and a more legitimate and correct system in all church matters—that some move should be made towards bringing the belfry and the occupiers thereof under regulations in accordance with Church order and discipline.

Perhaps no one thing has been the source of such constant trouble and annoyance to the clergyman as the belfry and the ringers; especially if the same parties happened to belong to the self-appointed and conceited choir of "*the singers*." I have heard of clergymen who have even refused to accept a living where there was a ring of bells; and of those who have said, upon learning the number of the bells in the tower, "Then, certain it is, there are as many drunkards in the village." "That man is a ringer," is quite enough in some places to intimate that he is an idle, sottish character. I know one clergyman who left his curacy in Worcestershire on account of the conduct of the ringers.

The condition of the belfry itself rarely seems to have attracted the notice of the Deans-rural, or of the Bishops and Archdeacons, so as to form one of the articles of inquiry issued to the churchwardens to be presented at their respective visitations; or surely much of the dirt and rubbish, which may generally be found there, would long ago have been swept away, and their dilapidated state repaired.

I would therefore most respectfully suggest that,

in all such articles of inquiry, questions should be inserted as to the condition and cleanliness of the belfry—the character and conduct of the ringers—whether drinking or smoking is ever practised there—and whether ringing matches for prizes are allowed?

There can be no doubt that such an inquiry would be productive of very great benefit: it would strengthen the minister's position, and put the churchwardens on their guard, if they found such points closely inquired into; especially if they found the inquiry was followed up by firm, active and *judicious* proceedings. For, in country parishes especially, the churchwardens have hitherto been rarely found to uphold the minister in such matters; in many places being raised but little above the grade of the ringers, and in some places being themselves of the number: thus the minister, feeling that the whole onus of controlling the bells and correcting abuses in the belfry rests solely on his shoulders, is induced rather to let things go on as he found them, than screw up his moral courage to undertake the task of bringing about a reformation. For though the controlling power, which by law the minister possesses over the bells, is generally now pretty well understood,* and his veto upon their use

* In the time of the public excitement about Queen Caroline, and the passing of the Reform Bill, several cases of most disgraceful conduct on the part of ringers were brought before the authorities, and the offenders were punished.

The 88th Canon is sufficiently powerful. See also Dr. Phillimore's Edition of *Burn's Eccles. Law*; or the late Editions of Prideaux's *Guide to Churchwardens*.

established, yet, unless absolutely necessary, and in very glaring cases, it will be found a very impolitic step for him to exercise his right; and, by *such* means, to bring about the reformation he wishes. He may *silence* the bells; but the chances are that, by so doing (especially if he has but lately come to reside in the place), he will awaken a most discordant clamour (or, to use a ringer's phrase, "open" other "clappers") throughout his parish against himself, and the Church, and all his ministrations, which he may not be able to tranquillize for years. In such a movement he will find it far better to give as little offence as possible, endeavouring to lead and draw the ringers to his views by kind and temperate reasoning, and not raising the angry and malevolent passions of such characters by an intemperate zeal, or any harsh and overbearing exhibition of authority. Men of little experience as country pastors may think a different course preferable; but time and practice will prove to them, that for their own comfort, for the sake of peace, and for the good of the Church, a firm but kind and gentle course—"unam eandemque viam premens" is the most effectual way to win the hearts of our people; after which, there will be little trouble in carrying out every desirable restoration of good order and ecclesiastical usages.

I will not presume to say that the plan adopted in my own parish is the best that can be devised, or that it has been brought about by the most judicious management; but it may be of service to others to know *what* was the condition of the ringers at one

time, and what improvement has been introduced among them.

When first I went to the parish of Bitton—July 1817—scarcely one of the six ringers attended the services of the church! I used to see them on a Sunday, waiting in the churchyard till the service was over; and then, almost before every person had left the holy place, they would strike out a merry peal. This was a state of things which could not be suffered to continue, and therefore at once I did what I could in the way of talking and reasoning with them; and at last I was obliged to make it a rule, that unless they came to pray they should not be allowed to ring. For a time this gave great offence; but I remained firm, and at last the man who was most outrageous confessed to me that my view of the matter was right.

In the course of time the old ringers dropped off, and others, self-appointed, succeeded; and very soon, by their own consent and proposal, I obtained the custody of the keys of the tower. Before that, the ringers had uncontrolled admission to the belfry when they pleased, and for what purpose they pleased; but ever since, the keys have been kept at the vicarage.

It has long been the practice—and a very common one it is in country villages—to ring a peal or two on Sunday mornings, sometimes before and sometimes after breakfast; but I observed that the ringers seldom came to church afterwards; and therefore, except on festival days, I at once prohibited all

ringing at any time before morning service. However delightful and poetical may be the thoughts connected with a cheerful peal on a Sunday morning, I am quite sure that in most cases it will be found that peal-ringing on Sundays—morning or evening—leads to the alehouse afterwards. Much evil therefore will be prevented by stopping it altogether, until a better system of *appointing* and *remunerating* the ringers can be introduced.

I once received a letter from the son of one of the ringers, in which he implored me to use my influence to put a stop to Sunday ringing; recounting in his letter the evils and misery he had witnessed in his father's family, which had resulted from this practice.

In the course of years I had the pleasure to see this point also carried; for, at last, the men themselves came to a resolution to give it up. I then expressed my approbation, especially as it was their own act—from conviction; but as they had done so, they at the same time understood from me, that it would *not* be allowed again for mere practice or amusement.

I should add, that when the Sunday ringing was discontinued, it was with an understanding that they might in future practise two evenings in the week instead of one, to which the amusement or practice had long before been limited. It would sometimes happen that a young hand stood in need of a little more frequent practice; and then it has been usual for some of the company to have the keys of the belfry, and *tie* the clappers, so that raising and

falling might be practised without any annoyance to the neighbourhood.

Experience has long convinced me, that no proper system for regulating the use of the bells, and the conduct of the ringers—subservient to legitimate ecclesiastical uses—will ever be effected without an endowment fund. This fund should be vested in the incumbent as trustee; and so appointed, that fines should be levied on the portion or dividend of each ringer who is guilty of any neglect of duty, or who acts contrary to the regulations which may have been agreed upon for their observance. The fine so kept back, at the end of the year, on the dividend day, should not be shared by the rest of the company; but should be given to some other parochial purpose (perhaps to the Village School Fund), to be settled in the endowment deed. .

Perhaps the great difficulty, in the way of carrying out such an arrangement, would be the getting a respectable and trustworthy man to be the foreman of the company; who would keep an honest account of all fines incurred; and who should be one with whom the company would agree to keep on good terms. Strongly impressed with this view of the subject, and consulting with friends on the principle involved in it, I had long wished to make a trial; and, having opened the matter to some of the ringers, the rules which are annexed to these remarks were drawn up and submitted to them.* With the ex-

* There may be some who will be disposed to smile, perhaps, at the reading of these rules; but it should be borne in mind that

ception of the first—which is a resolution—those at the beginning are only an amended form of some which they had themselves made, or had traditionally observed : those at the end are drawn up on the principle here laid down. The men readily signed them ; and, since that, the churchwardens have added their approbation—so that, at all events, a trial will be made.*

It should have been noticed, that the ringers to whom these rules apply have nothing at all to do with the service bells and chiming : the sexton attends to all that. It is certainly desirable that the ringers, as officers of the church, should be in attendance at those times : but that cannot be expected of men of that grade, unless they are paid for it, or unless they have been happily trained in principles of love and reverence for the Church, and feel it an honour to be so employed ; but, even then, you would not be certain of the required number on every occasion.

In some places, especially in the north of England, it is usual to *ring* the bells in peal before service ;

they are by no means what I would wish them to be : they are, it is to be hoped, but a beginning of a more excellent way ; they apply to a particular place ; it is surely not expedient to generalize, at first, where a reform is aimed at. “Wisely and slowly ; perfection is but of slow growth. They stumble that run fast.”

* Since these remarks were written, the rules have been tried twelve years, and worked most satisfactorily. In this place I have introduced a shorter code, which I should recommend for general use.—*Note in Second Edition, 1861.*

but the more general practice is to chime, as in the old distich—

“ To call the folk to church in time
We chime.”

and miserable work that is in some places ! the sexton and a boy, or other chance person helping him, jangle three or four bells. A clever fellow may sometimes be seen chiming *three*, or even more, by leaning against the wall, and taking one rope in each hand, while another rope is looped up for each elbow and his foot to work. “ Angels’ music !”

And here I may be allowed to mention a contrivance which may be easily adopted, and with very little expense : by which all the difficulty in the way of *securing the regular* chiming of all the bells in a tower may be obviated.*

This may be effected either by heavy hammers to strike outside on the “*bridge*” of the bells, like those of a clock ; or by fixing light hammers or balls, proportioned in size, and in length of lever, to each bell, and so arranged to work on an axis, as to strike on the inside—just where the clapper strikes,—and when not in use, to drop down, so as to be quite clear of the swing of the bell when rung. This mode is more simple than the outside hammers, for which there is often little or no room. A cord, or “*sash line*,” fastened at the end of the lever, may be guided by pulleys to a given point in the church, where the ends are tied, when used, to a fixed horizontal bar.†

* See Appendix, with an illustration.

† See Improved Moveable Lever, p. 30.

This bar should be about three feet from the floor ; and about two feet above it there should be the last set of pulleys, arranged in a row about three inches apart—the pulleys should not be less than four inches in diameter. Care should be taken to pull the lines down, so that the hammer or ball may be adjusted above within a few inches of the bell. With such an arrangement one person may easily do all the work : the hammers must be relieved from the bells when he has finished, otherwise the bells cannot be rung if required. In this way the chiming is done at Bitton : and by this simple method,

“To call the folk to church in time,
One little boy six bells can chime :”

indeed, any number might thus be chimed. There is also this advantage, which will be duly appreciated by some, that the ropes hang down to the floor of the church.*

By the other method, with *outside* hammers, the finest chimes, on the heaviest ring of ten bells in the kingdom, daily pour forth their deep-sounding solemn musical notes at ten and three at the Cathe-

* These hammers offer a great temptation to the playing of tunes, which are objectionable for services, but for a funeral this ancient chime, adapted from the Lady Bells at Lincoln, is very effective :

To be continued until the Minister enters the church porch.

1	3	1	2	4	—	1	5	1	2	6
O	Lord,	have	mer - cy		—	mer - cy	we	pray	Thee.	

dral of Exeter;* but there, the weight of the bells requiring heavy falling hammers, additional levers are used below, like the keys of a pianoforte.†

Much in the same way, the celebrated Carillons on thirty-three bells at Antwerp, and other Belgic towns, are worked.

In an interesting pamphlet, on “The Use and Abuse of Church Bells,” (Masters, 1846), the author has laid down rules and suggestions which he most judiciously advises none of his brethren to “act upon, until he can himself realize the Church system upon which they are grounded.” But, even when the minister may have happily adopted such views, he would find it most painful and difficult to attempt to introduce, and *maintain*, such a belfry system: where for years, perhaps, the ringers have had their own way: and the parishioners are attached to the familiar sound of their

* “How many a tale their music tells,
Of youth, and home, and that sweet time
When first we heard their soothing chime.”
“Oh wondrous power of modulated sound!
Which, like the air (whose all obedient shape
Thou mak’st thy slave), can subtilely pervade
The yielded avenues of sense, unlock
The close affections, by some fairy path
Winning an easy way through ev’ry ear,
And with thine unsubstantial quality
Holding in mighty chains the hearts of all;
All, but some cold and sullen temper’d spirits,
Who feel no touch of sympathy or love.”

† These have since been altered, and inside hammers introduced.

musical bells, rung out on every occasion of village rejoicing. Where, however, it can be taken up “*ut res integra, et in parochiâ quasi novâ,*” there can be no doubt, that with some slight alterations, which the practical part of ringing requires, the system laid down would be beautifully in keeping with all that a true English Churchman can desire, *supposing an endowment fund can be raised, and permanently secured.* It would be most gratifying to see such a system well established. But,

“*Sincerum est nisi vas, quodcumque infundis acescit.*”

So, unless you begin *de novo*, by raising up a body of men well-grounded and instructed in the Church system, it would all be unintelligible and hopeless. But accomplish that, and then let the ropes hang down to the very pavement of the church; for it may be hoped that all would be conducted as decorously almost as the ministrations in the chancel.

I have ventured to say that some alterations are required in the suggestions proposed in the pamphlet alluded to. Perhaps they would have been more intelligible, if the author had given a definition, or explained what *he* understands by a *peal*.* He pro-

* It is often asked, “*What is a peal?*” and it seems strange that there should be any difficulty in answering the question. The term is generally applied to any ringing of bells together—no matter whether of ten minutes’ or ten hours’ duration. Bells are first *raised*, either singly or in *peal* (that is, in ringing order); they may then be *set* or not, as the ringers please, or rung in changes, or round ringing, or *muffled*, and then ceased by setting or falling, and then would end a *peal* in common parlance, and in places where there are only three or four bells, and scientific

poses one peal to be “a quarter of an hour;” whereas it is well known that some heavy bells cannot be raised and ceased (“falled”) in that time; nay, some heavy bells never can be raised in peal, but are raised singly: *à fortiori*, a “five minutes’ peal” would be still more difficult. Bells may be *chimed* so long, but they cannot be raised and rung; it is quite impossible to have such a peal “after a burial.”

It can hardly be expected that any ringers would think it worth while to meet to *practise* only for a “quarter or half an hour;” it would be almost useless: and a five minutes’ peal at midnight would be unintelligible—almost as much so as what is meant by the phrase, a “solemn cheerful peal.”

I trust the author will excuse these few remarks on his suggestions: they are not made with any change-ringing is not known. Such was the meaning in pre-Reformation times, as may be seen by an extract from the *Lives of the Berkleys*—a MS. consisting of three volumes, folio, in the possession of the College of Arms—an account of which may be seen in the fifth volume of *Notes and Queries*, p. 616, first series.

On the death of Lady Isabel, wife of Lord Maurice Berkeley, who died in 1516 at Coventry, the following ringing took place:—“Rynging daily with all the Bells continually: that is to say, at St. Michael’s xxxiii peles, at Trinitie xxxiii peles, at St. John’s xxxiii peles, at Babyleak, because it was so nigh, lvij peles, and in the Mother Church xxx peles, and every pele xii.”

But since the introduction of scientific change-ringing on the principle of permutations, early in the last century, the term is known and used as a performance of the full number of changes of which the bells are capable, or any number above 5,000; any portion of changes under that number, with seven or more bells, is called either a short or long *touch*; in some places a *piece of ringing*, by others a *flourish on the bells*, &c.

spirit of jealous opposition—far from it; I feel assured that we have each the same object in view—*an improvement in the belfry*. I would even thank him for the lead he has taken; but we are not yet, in my humble opinion, sufficiently advanced in Church discipline and intelligence to adopt a uniformity of use in this matter. The circumstances of parishes vary so much, that the clergyman of each must act accordingly; but if he will turn his attention to the subject—and it really is one of serious consequence to the morals of his parish, as well as to the credit of the Church—and be guided by those circumstances, and act temperately and judiciously, he will soon make some progress towards an improvement: his example will be followed by others; and in this way we may hope to see our belfries well ordered, and our ringers and their households among the best-conducted in the parish.

To quote from the writings of one of acknowledged judgment in practical matters—

“In places where the right persons have given up the custody of the keys, much irregularity has been the consequence; and when the power has long been used by others, without any attempt at restraint, much consideration, and gentle explanation, will in all fairness be due, before this power is taken away. Frequently, however, a little good advice, given in a Christian-like, friendly manner, will produce amendment.” *

It must be remembered, that the evils to be con-

* *Cottager's Visitor*, vol. iii, page 54.

tended with are not of yesterday, but are deeply rooted, having been the growth of years, originating perhaps soon after the superstitious use of bells, and the rigid discipline of the Church of Rome, ceased : they have since crept in with other abuses and irregularities which from that time have unhappily prevailed in our Church. Certainly they are as old as the depraved age of Charles the Second. For, whereas before that period half or three quarter wheels only were in use (as is the case at present in parts of Dorsetshire, Devon, &c.,) an "improvement in the art of bell-hanging" was, about that time, effected by the introduction of "round wheels" (see "*Campanalogia ; or, the Art of Ringing Improved,*" London, 1677, p. 44) ; the effect of which was, that peals of changes could be rung more regularly and easily, the bells being rendered manageable at *every* pull. Thus, "the mysteries of bell-ringing" became a fashion, and so the evil seems to have originated ; for the idle, drunken habits of ringers are alluded to in some excellent "Advice to a Ringer," with which a section on ringing closes, in a little work published in the year 1684, called the "*School of Recreation ; or, Gentleman's Tutor.*" As the whole passage seems to bear so well on the subject before me, and as it contains a short account of the first introduction of bells, it will not perhaps be out of place, nor be digressing too much, to introduce it here as a suitable conclusion.

"When God, in Israel's exodus out of Egypt, commanded Moses to consecrate Aaron and his sons,

and invest them with those pontifical vestments according to the pattern God had cut out, it is observable, that the robe of the Ephod was, with a particular circumstance of beauty, to be adorned by hanging the hem of it with *golden bells** and pomegranates, each placed in an orderly position, one by another, round. This was the first institution we can read of for the use of bells in sacred offices ; but the reason was this: Because in Aaron's ministrations before God, when he entered into the Holy Place, and when he came out, the sound of the bells might be heard in the temple for a memorial to the children of his people. This use of bells continues in the Aaronical order of this day. From hence the Christian Church likewise (of which the Church under the Mosaic dispensation was but a type) has made use of bells for the notifying the time when the people are to assemble, and made a signal for convocating them together to the temple : and herein differing from the Mahometans, in the steeples of whose temples are never found any bells, but criers—persons who, with a loud voice, call them to prayers.

“ Now, then, let us make this use of the institution of bells : First ; let not only the musick and delight the bells give thee invite thee to come to the temple to be a partaker of that pleasure they may afford thy body, but let their musick invite thee to come thither when they call thee, to exercise thy soul in devotion, to God. Do not let thy frequent coming thither on week-days for thy diversion make thee absent thyself

* Exod. xxviii, 33.

on Sundays from thy devotion ; but let their original use make thee mindful of the Sanctum Sanctorum, the Most Holy Place. Do not let the Sunday morning's peal engage thy presence then, and the alehouse have thy company afterwards. Be as quick in hearing the chiming for prayers, as thou art in the notes for pleasure.

‘ Whene’er the Old Exchange of profit rings
Her silver saints’-bell ; of uncertain gains ;
Thy merchant soul can stretch both legs and wings :
How canst thou run, and take unwearied pains.’

“ And should’st thou not be as nimble when the saint’s-bell of the church sounds in thy ears, and calls thee to attend the priest, who now signifyes his entrance into the Holy Place, and invites too to joyne with him in the sacrifice of prayers and praises ?

“ Secondly ; nor let the bells be made thy lullaby, to drown some dissatisfaction, and so make thee repair to the belfree (like the nurse to her whistle-bells) to quiet thy disturbed mind, and thus (as the divine poet* excellently expresses it) to silence it with

‘ Look, look, what’s here. A dainty golden thing ?
See how the dancing bells turn round, and ring
To please my bantling ! Here’s a knack will breed
An hundred kisses ; here’s a knack indeed,’ &c.

But let the altar have thy presence in communion with God, in prayers for his grace, and patience to support any calamity that may fall upon thee.

“ Lastly ; let the bells put you in mind to con-

* Quarles’ *Emblems*, book ii, viii.

template on death; and, every time you ring, think how long it may be ere one of these may be your turn to have to sound

‘The nine sad knolls of a dull passing-bell,
With the loud language of a mighty knell.’

“This, in short, is the use the ringer ought to make of this his recreation, which, if he makes duly and rightly, he may then lawfully enjoy all the benefit he can desire from it.”

ST. MARY'S CHURCH, BITTON.

RULES FOR THE RINGERS.

We, the undersigned company of Ringers of the parish of Bitton, by and with the consent and approbation of our Vicar and Churchwardens, have agreed to the following rules and resolutions: namely,

FIRST, and chief of all,—We resolve to be a respectable body of men, as well as good Ringers; and to give no occasion, by our conduct, to any person to speak against us, nor to bring a disgrace on the church in which we are connected officials. Neither will we desire to take into our company any who are of low life and character—idle, drunken fellows, and sabbath-breakers; for we acknowledge that the belfry is part of the church, and that the Ringers, being officers of the church, should bear a good character: and this is what we will endeavour to promote.

II. We agree to have a Treasurer, who shall hold our moneys till the end of the year, and the same person shall be the foreman of our company; and he is to see that these rules are observed, and the forfeits hereafter mentioned put in force, and deducted out of the moneys given to us; and they are to be regularly entered in a book to be kept by him, and divided equally among the Ringers at the end of the year. And if our treasurer and foreman does not do this, the majority of us shall elect another.

III. We now agree that *G. B.* shall be our treasurer and foreman.

IV. When the bells are to be rung for a marriage, or any other special occasion, the foreman shall give notice thereof to the Ringers.

V. Every Ringer who shall not attend at all on such occasions shall have no share of what is given, and shall also forfeit one shilling: unless he be prevented by sickness,

sufficient to disable him from working (provided timely notice has been given); every Ringer so absent shall be entitled to half a share. And every Ringer, having had notice, is to be at the tower by the time the bells are raised up, or forfeit sixpence. And if he does not remain till the ringing is all over he is to forfeit his whole share; unless the majority present give him leave to go off.

VI. When there is ringing more than once on the same day, if any Ringer does not attend at each time, he is not to have his full share; but only a part, in proportion to his attendance.

VII. If any Ringer cannot attend himself, he shall be at liberty to provide a substitute, provided he be fit and able to take his place, and of good moral character. And any Ringer employing such substitute shall be liable to all forfeits, as if he was there himself.

VIII. Any Ringer, who absents himself from the tower three months, without providing a proper substitute, shall be considered to have left the company; but he shall be entitled to a share of our moneys up to the time he left off coming.

IX. No person shall be considered a Ringer qualified to share any of the moneys given to us, until he is able to raise and fall his bell in proper time and place, and ring one peal of changes. And before any person is taken into our company, his name shall be given to the Minister and Churchwardens: and if he is approved by them, he shall pay to our fund two shillings and sixpence, as entrance money: after which we will endeavour to teach him.

X. That, for practising, we agree to meet every Saturday evening throughout the year—at half-past six o'clock in the winter, and at half-past seven in the summer: excepting when any person (man, woman, or child—rich or poor) is lying dead, between Upton Lane and Westover—or near the church—when the bells, out of respect to the feelings of the friends of the deceased, should be silent. And also during Lent—that is, from Ash Wednesday to Easter; but we will meet on the evening of Shrove Tuesday instead of the Saturday in that week.

XI. If any Ringer comes fifteen minutes after the time, or is absent—unless through sickness—or leaves the belfry before the bells are down (unless the other Ringers consent to his going off)—he shall forfeit threepence.

XII. If by mutual agreement we meet on any other evening of a working day, for practising, the same rule is to hold good.

XIII. That, for ten shillings given for a wedding, we agree to ring *one* hour; unless it should happen on a Sunday morning, and there is not time before the ten o'clock service bell. For twenty shillings given, we will ring one hour after the wedding, and one hour in the evening; and, if any more is given, we agree to ring but one hour more, about the middle of the day.

XIV. After the funeral of any one of our body, we agree to ring a muffled peal without any pay. And after the funeral of any good Christian, in the full Communion of the Church, we agree to ring a muffled peal when requested by the relatives through the Minister. And when the parties are unable to give anything, it shall be freely done by us as a work of Christian love and charity.

XV. If any Ringer refuse to ring on account of the small amount of the money given at a wedding, or by benefit clubs, at Whitsuntide, or on any other special occasion—provided it be not less than ten shillings—he shall forfeit one shilling; and if, for want of him, the six bells cannot be rung, he shall forfeit all that would have been given to the company.

XVI. We agree not to commit any damage to the belfry or tower, to the ropes or bells, nor to suffer any to be done. If any of us is wilfully guilty of it, he shall pay for it out of his share, or leave the company, and be reported by the foreman to the Churchwardens.

XVII. The Ringer who fetches the keys of the tower from the vicarage is to be answerable for taking them back.

XVIII. The Bells are not to be rung improperly, nor in any other way than the usual mode of ringings (except in case of fire, which God prevent); nor are the bells to be fired

or clashed—excepting on the 5th of November, twelve rounds in the evening.

XIX. There is to be no ringing on Sundays, for any person or thing—excepting for a wedding, if there is time before ten o'clock: and on the Sunday mornings stated in the next rule.

XX. The ringing days are the Queen's birthday, and the 5th of November, morning and evening. If those days fall on a Sunday, then the ringing is to be done on the Monday following: for which the Churchwardens pay twelve shillings each day, and twelve shillings when the Bishop comes. Also before eight o'clock on the mornings of Christmas Day, Easter Day, Ascension Day or Holy Thursday,—and Whitsunday, being specially to do honour to our blessed Lord and Saviour,—Old Year's eve, and New Year's morning. For these last occasions we trust to the generosity of the parishioners, to give us what New Year's gift they please. All which our foreman shall enter in a book, which any subscriber to the fund may see.

XXI. As a *body*, we agree not to spend our moneys in drinking; but every Ringer, having received his share, shall be at liberty to do with it what he pleases. And if any member of our company reproaches another member for refusing to join and spend all together, he shall forfeit one shilling.

XXII. If any disputes or misunderstandings arise among the Ringers (which God forbid), they may be referred to the Minister and Churchwardens; and, if so, we agree to abide by their decision.

XXIII. And in order to promote our own respectability and to secure the gift of thirty shillings offered to us by some unknown friend through the Vicar—added to his own New Year's gift of ten shillings—making together forty shillings for the six, seven, or *eight oldest members* of *our* company *who live* in the parish, and not more than one mile from the church; we agree, that on Christmas Day, Easter Day, and Whitsunday, when there is early morning ringing, and sometimes between nine and ten on a Sunday morning for a wedding—on all those days, six of us at least, and all if possible, shall be particularly careful to attend the services

of the Church, and in proper time; and that whoever is absent, or comes in late, shall forfeit, of his share of the said forty shillings, half-a-crown.

XXIV. That if either of us should disgrace himself by being drunk on a ringing day, or in the belfry, he shall forfeit half-a-crown; and also be in danger of being turned out of our company, if the other Ringers, or the Minister and Churchwardens, think fit to do so.

XXV. That if any Ringer of the said number is guilty of *fighting*, quarrelling, swearing, drinking, or smoking in the belfry, he shall forfeit one shilling. We know that we have our own houses to eat and drink in, and our own firesides where we can sit down and smoke. "There is a time and place for all things."

XXVI. None but the Ringers, or their substitutes, should handle the bells. And the foreman is not to allow any "idle-cornered youths" of the place to be with the company of Ringers in the belfry. The foreman also is to be responsible for the conduct of the company in the belfry, and to report to the Minister any ill conduct of any member which comes to his knowledge; and also if any damage is done.

XXVII. No evening ringing is to begin after eight o'clock, nor to be continued later than nine; excepting on the evening of the old year—or forfeit sixpence each Ringer.

XXVIII. The use of the bells is to be confined strictly to ecclesiastical purposes, as they were always intended to be: that is, they are not to be rung for any political matters, such as elections; nor lawsuits, or trials, and such like; nor for any clandestine or runaway marriages, nor marriages elsewhere than at the church; nor for prizes; nor to be fired or clashed, excepting twelve rounds on the 5th of November evening; if they are, the *whole of the thirty shillings will be withheld*: nor for any unusual special purpose, without *first* obtaining the consent of the Minister and one Churchwarden, which the foreman is to do BEFORE he gives *any notice to the Ringers*.

NOTE.—All these latter forfeits will be kept back from the said forty shillings, and will not be divided among the

other *Ringers*, but will be given to some other purpose. If these rules are found to answer, after a trial of two years, from New Year's day, 1848, the thirty shillings now offered will probably be doubled; at least the Vicar promises to use his influence to get it.

XXIX. And now, lastly, we agree to endeavour as much as in us lies, to be good Christians at all times, and regular attendants at the services of the Church, either at Bitton or Oldland; not to break the Sabbath, for our own happiness here and hereafter. And we must acknowledge, that if we can attend to ring for the sake of getting a trifle, or to save a forfeit, or for our pleasure, it is certainly a discredit to us not to attend to worship the Lord God Almighty for the good of our own souls, who has redeemed us through Christ from eternal death. Witness our hands:

(Signed)	M. H.	G. B.
	I. B.	W. B.
	T. B.	R. H.
	G. W.	S. P.

We, the Vicar and Churchwardens of Bitton, subscribe our names, as approving the annexed regulations for the conduct of the *Ringers*; and when any person wishes to become a member of the company, he will be expected to promise to conform to them by subscribing his name, agreeably to a resolution of a full Vestry Meeting held at Bitton, 1799; when rules of the same meaning, though worded rather differently, were drawn up and signed by the *Ringers* of that time. And the Churchwardens were then instructed to see that there should not be more than one company.

(Signed)	H. T. E.	Vicar
	W. M.	} Churchwardens.
	J. T.	

Jan. 1848.

ONE WORD OF ADVICE.

Ringers, remember this—that nothing can keep you together, but sobriety of character, and harmony among yourselves. Without these you will be like a rope of sand, doomed to drop to pieces, and leave your cheerful Tower in sullen silence.

CHIMING:

AN APPENDIX.

CHIMING.

I HAVE had the pleasure of receiving so many letters from clergymen and laymen in different parts of the kingdom, for a fuller and more detailed explanation of my method of chiming, that it is supposed this brochure of mine will be more generally serviceable, if I show in a cut the principle of this simple contrivance, which, without vanity, but in justice to myself, I claim as my own. Any ingenious village workman can set it up, but he must vary the form of the levers, and the position of the pulleys, just as a house bell-hanger would vary the cranks according to circumstances.

Referring to page 11 of "Remarks," and the Plate vii annexed, the iron balls (1) should vary in size from $3\frac{1}{2}$ in. to $5\frac{1}{2}$ in. diameter, and by drilling an inch hole, at the point which strikes the bell, a plug of wood may be driven in, and so a more mellow sound will be produced. And if a piece of leather, or felt, be added to the wood, the effect is that of a muffle; and, for funerals, an extra set of gear may be set up, so as to strike on another point of the sound bow. It is always better to make these chime-hammers strike anywhere but where the clapper strikes,

a little to the right or left as it can be managed. The spindles, or axes (rollers, as the organ builder calls them), may require to be varied in length, but generally six inches will do, and these ought to work very freely in the cheeks or holes (2). A well-fitted *rule-joint*, which a good workman might suggest, would be objectionable and more costly, because it would require more frequent oiling, and, being exposed to the damp of the bell chamber, might soon get set fast from rust; but all the pulleys should be well made, and so mounted in a carriage that they may be easily taken in and out. The *pins* should be turned and fitted with a key, or nut and screw. Three pulleys to each bell will be generally sufficient: (perhaps two may be enough for the bell just over *the stand*), one immediately under the end of the lever, fixed (with *coach screws*, as best it may be) to the *under* side of the bell chamber floor (6), and in a direction to *lead* the line to the pulley (7)* which *plumbs* above the stand or floor, where a nest of pulleys (8) is fixed about six feet from the stand. The upper pulleys may be of cast iron, four inches diam.; they should be bushed with brass and fitted up in carriages, each one adapted to its place and required angle. "*Side pulleys*" are not good, nor "sash pulleys."

The lower pulleys, which are to be fitted in a nest (8), should be of hard wood, and brass bushed, that they may make no noise.

This explanation, in addition to what may be seen at page 9 of "*Remarks*," and by referring to the

* Each of these pulleys requires to be fixed at a different angle, according to the position of the end of the lever *s*.

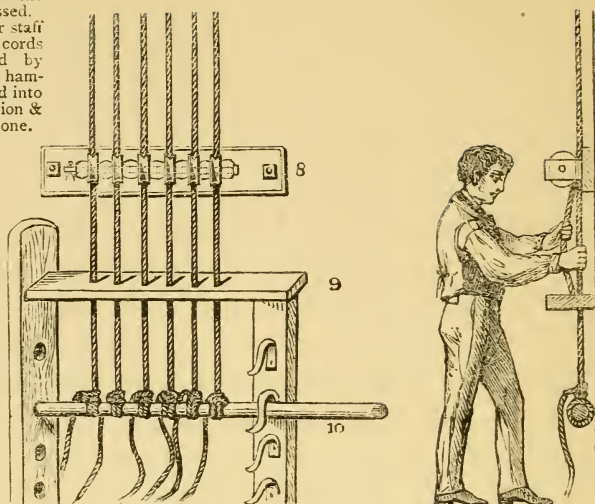
accompanying illustrations, will probably be sufficiently clear to enable any person to complete the whole. In some places it may be necessary to fix pieces of quarter timber to the bell cage, for supporting the cheeks (2) in which the levers work, as the floor may be too much below the bells.

By this contrivance, the bells are always ready to be chimed, and it may be done by man, woman, or child, or even by the clergyman himself; neither is there anything to interfere with the ringing of the bells, provided the lines are untied, to allow the hammers to fall down at rest ($\frac{1}{4}$). The tones are brought out with a soft, mellow sound, and all the harmonies are clearly generated, for nothing lies against the side of the bell, the hammer falling away at once by its own weight. The wear and tear of the whole gear is very trifling, and with care will last for years. When at rest (4), the hammers lie on the floor, or on a blocking under the bells. For chiming, each line is to be pulled down, so as to raise the hammer within six or eight inches of the bell, and then it must be tied to the bar (Plate vii, 9), with a double half hitch in a bow: when ceased, the knots are to be unslipt.

Excepting where the bells are very light, it has been found advisable that the bar should not be *fixed*, as represented in former editions, but so contrived that it may be raised or lowered as circumstance may require. In this way, as here represented, all the hammers may be brought into gear at once, and also all may be thrown off at once. Instead of the staff, a roller, with wynch and ratchet is still better for very heavy bells.

9. Fixed shelf through which the cords are passed.

10. A lever staff to which the cords are tied and by which all the hammers are lifted into working position & let off when done.



A patent for “Ringing Bells by Machinery” has lately been taken out by Mr. Jones, of Pendleton, the particulars of which may be obtained at the patent office for a few pence. It is a contrivance for *chiming*, not for ringing. The following is extracted from my remarks in the “Builder,” Oct. 2, 1858:—

“Notwithstanding the daily marvels produced by science, I do not believe a peal of bells will ever be *raised, rung, changed and ceased*, by any *machinery*. *Ringing* always implies that bells are swung; and it is only by that swinging that the grand full tone of a bell can be brought out.

“Mr. Jones’s machine may be very ingenious; but be that as it may, there has been in use at Ottery St. Mary, for many years beyond memory, an arrangement of outside hammers, connected with wires, and cranks, and levers, and a barrel fitted with lifters like a chime-barrel; and by turning a handle a person very easily chimes all the bells.

“About forty years ago, I set up a contrivance at Bitton, with hammers striking inside, and levers, lines, and pulleys, all brought to a given point on the floor. This arrangement is very simple, and not liable to get out of order: it has been in constant use. All dependence on a set of ringers is got rid of, and soft and subdued harmony is produced; and the arrangement in no way interferes with the swinging of the bells, for ringing either singly or in peal.”

Since these “Remarks,” to which I now add this Appendix, were published, my station in the Lord’s vineyard has been changed from Bitton, county of Gloucester, to Clyst St. George, county of Devon; but it may be satisfactory to state that the rules for the ringers still work well there. They would not be applicable everywhere, and were not required here. Wherever such rules are introduced they should be as short and simple as possible; but one thing I recommend most forcibly, wherever it can be managed, viz., that “one way to reform the belfry is to bring the ringers down, *ad parimentum*, and *in conspectu ecclesiæ*,” and then, whatever evil work may have been carried on heretofore upstairs, and out of sight, will soon disappear. There may be many difficulties and obstacles in the way of making such an arrangement, both practically as well as socially; but it is worth a clergyman’s while to take the whole cost of it upon himself, if that should be a matter of contention; it has been done here, though the road for the ropes was rather crooked, and the length of “the pull” greatly increased; however, the ringing is managed very easily, and with more

comfort than when the ringers were nearer to the bells.

There has also been set up here my contrivance for chiming. It is true we have but three bells, but now they are never jangled as heretofore—but evenly and regularly speak out their simple original music as the service hours return—and sometimes it is done by a child not eight years old.*

It is nearly ten years ago that the foregoing “Remarks” were published, and since that time, it may be hoped that an interest about bells has very much increased, and that many are turning their attention to a reform in the belfry; with this object in view, perhaps I cannot do better than second the advice given by the Rev. Mr. Lukis, in his “Book on Bells,” viz., “that the clergyman himself (but I would add, as an amendment, *if he be strong and healthy*) become a ringer, and take his place in the belfry.” He will probably, be able to do this more comfortably and effectively with a young set, meeting them for the love of the thing, and so try to raise the tone and caste of the ringers, and induce his respectable inhabitants to join, not for filthy lucre sake, but for the honour and pleasure of ringing. The old hands, if they be not incorrigibly bad, may be left to ring all the peals for money’s sake, which is, probably, the root of all the evil which so shamefully exists in many of our belfries.

* Since the publication of the above in 1861 the three bells at Clyst St. George have been augmented to six; and the ropes, which fall to the pavement, do not at all interrupt the view of our fine “Doom window,” by Hardman, in the west.—Whitsuntide, 1871.

And here I would quote a letter lately addressed to me by one of the middle class—a person well experienced in the art and mystery of ringing, and who often takes part in a peal of grandsire triples which lasts from two to three hours.* “The public seem to think that ringing is extremely laborious work, and that the beer-can is a necessary appendage: but if they understood the art of variation, they would then enjoy the exertion as we do. It is a pity that this noble art should be so little understood by the more enlightened upper classes. How delightful it would be to see a body of gentlemen take to the ringing of the bells of their parish church, learning the art thoroughly. I am convinced it only wants a start, and then we should have *in the Church*, among the congregation, those who resort to the steeple, and shut out the low characters who now infest the belfries.”

Another most respectable ringer in the midland counties writes thus:† “No music can be compared with bells in full swing—no recreation so manly, amusing, and skilful as the ringing of them. I wish the science were made indispensable among the qualifications of a clergyman, who has, or ought to have, the command of both bells and ringers; then we might hope for a reformation in ringers and an advancement of the science, but till then, I fear, all attempts will be troublesome if not futile.”

And surely there is good reason for this, when the fact is so patent, that the ringers are seldom to be seen at church; and in the metropolis, there are not

*The late Mr. Joseph Robinson of Woolwich, 6 Dec., 1858.

† Mr. John Wm. Taylor of Loughborough, 8 June, 1859.

twenty, of all who ring in the fifty to sixty steeples, who attend the services of the sanctuary.

After saying thus much by way of encouraging ringing, it may seem strange to say a word against the ingenious science of change ringing: but as I have stated in my "Remarks" (page 15), that the evils probably came in with the invention of *whole* or round wheels, by means of which bells were manageable at *every* pull, and could be rung *high*, and *changed*, and set *ad libitum*; and the well-to-do merry-men of a parish joining in this new recreation, they easily raised money enough to increase the original simple rings of *three* to six or eight, and so increased the number of their fraternity; and in proportion, the evils which we now deplore were enlarged; and that is not all: for having managed to add to the number of a ring, whether a tower was built for such an increased number or not, they would call in the help of some ingenious and interested mechanic, and get him to squeeze in the extra bells by erecting additional *framework*—sometimes *upon* the original cage—which being raised with long timbers, it became almost impossible to brace the whole properly, so as to make the extra wood-work stiff enough to bear the swing of the additional heavy metal; and therefore, in order to keep the cage steady; wedge after wedge would be driven between the timbers and the walls of the tower; and hence the irreparable damage done to many a beautiful building: which, if not remedied in time, must eventually bring down, if not the whole tower, the whole superstructure.*

The ringing in olden times could never act with

* See page 46.

such battering-ram violence ; because, with the half-wheels (Plate ii), the bells were not raised to a set pull, but rung a little above stock level, and kept there a certain time, and then ceased ; and so the ringing would be continued, and each time of its repetition was called a *peal*.*

Then they did not set the bells, for there was no sally : the ringer held the rope by its end ; and in those early days, when the priests themselves were the ringers, there were rings of brass, sometimes of silver, at the end for the hands.—Fosbrooke *Monac.*, p. 289.

And this explanation of a peal may be an answer to what has been advanced, that there are not bells enough in some parishes to ring what the 67th Canon directs, viz. : “At the death of a person, one short peal, and one before and one after the burial.” The ringing, even of a *single* bell for any length of time, would be called a peal, and so it is now termed, particularly in Scotland, where single bells prevail.

And here I would repeat a caution contained in my Paper on Bells, read before the Bristol Architectural Society, 10 December, 1849, with the Practical Remarks now republished.

“It may not be amiss to say a few words about the belfry—by which is generally meant that part of a church tower or steeple in which the bells are hung, but it also means the place upon which the ringers stand to ring. The place for the bells is properly called the bell-chamber or loft, in which the timbers are framed together and constructed into what is commonly called the ‘cage.’

* See Note, p. 12.

“ It is of the greatest consequence that the timbers should take their bearing independent of the masonry, that is, *not fixed into it.*”

“ If, in the course of years, as will be the case, the frame should vibrate or get ricketty, it should not be made steady by putting wedges between the beam ends and the walls, as is commonly done by inexperienced workmen, but it may be easily stiffened by driving hard oak or iron wedges in at the backs of the tenons of the *braces* in the mortices in the sill pieces ; and, if the timbers have shrunk away from the shoulders of the tenons, then drive out the old pins, and bolt the upper timbers down to the beams below.

The timbers should always be laid on wooden plates, the whole resting either on stone corbels, or on a set-off formed in the wall. It is not the downward pressure from the weight of metal, but the lateral pressure or vibration caused by the motion of the bells, which does the mischief, especially if any of the timbers are let into the walls or touch them laterally. To avoid this, a well-constructed cage is trussed and braced diagonally with most substantial timbers ; the weight of the whole, if properly rested on corbels or set-offs, keeps it steady. The higher the bells are placed in the tower, the more does the vibration caused by ringing them affect the masonry.”

Of late years, a growing feeling has most happily prevailed with regard to the organ and our parochial psalmody and Church services ; and, having lived to test the value of music in our parishes and schools, I would ask—Why may not something be done in the

* See Postscript.

same way with the music of the bells? Mr. Lukis, in his book (p. 49), suggests “a religious fraternity;” and I would beg leave to commend specially to the notice of my younger brethren, the clergy, the result of his experiences in his parish. “The experience I have here has convinced me, that it is utterly futile to attempt to reform the ringers, or to maintain the respectable character of the ringers, without a regular personal attendance in the belfry. But it is the same in that as in everything else undertaken in a parish; there can be no success without trouble and perseverance; and who should grudge his time and trouble in any matter that concerns the well-being of the parishioners? People may, perhaps, smile at the idea of a clergyman making a point of entering the belfry with his ringers, but they may depend upon it that much real good may be effected by his so doing.” If the society recommended by Mr. Lukis is to be “a religious fraternity,” we must adopt the usages of by-gone days, thus described by Dr. Rock, in *The Church of our Fathers*, on the subject of Guilds (vol. ii, p. 395):—“Mutual help with regard to this world and the next, this life’s present welfare, and the soul’s happiness hereafter, was the bond which linked the Anglo-Saxon layman with his fellow laymen in these holy companionships.”

It has been supposed that these guilds very nearly resembled modern clubs and benefit societies. Every one has heard of societies of ringers, viz., College Youths, Cumberland Youths, &c. In the library of All Soul’s College, Oxford, is a manuscript of the order of a company of ringers called the “Scholars of Cheapside,” dated 1602. The probability is that

these associations are relics of the ancient guilds ; for as early as the time of Edward the Confessor there was in Westminster a guild of ringers. They are recognised by Henry III, as appears by a patent roll, in the 39th of his reign, dated the 6th of March, which may be freely translated thus :—

“ Know all men, that we have granted to our Brethren of the Guild of Westminster, who are appointed to ring the great bells there, that they and their successors shall receive annually out of our exchequer 100 shillings, fifty at Easter, and fifty at Michaelmas, until we provide the like sum for them payable out of lands for the said ringing. And that the brethren and their successors for ever enjoy all the privileges and free customs, which they have enjoyed from the time of Edward the Confessor, to the date of these presents.”

To render this pamphlet more useful to those who may be pleased to consult it, I have added the five plates which were annexed to my Paper on Bells, published in the report of the Bristol Architectural Society, 1850, the whole of which were lent to Mr. Lukis to illustrate his book. The first is copied from a bell in Mersennus de Harmonicis, folio, 1648, —translating his Latin terms.

I don't remember to have seen any bell in England furnished with a clapper of the form represented. The tail, commonly called the “ *flight*,” is so short, that the probability is such that a clapper would “ *rear*” in peal ringing as is now practised in England. The way to cure a clapper of *rearing*, or *doubling* its blow, is to lengthen the flight ; but this

must be done with great caution, or the result may be fatal to the bell.

And here I would give another caution. The sexton, or whoever may be employed to chime, is apt to "*clock the bells*," that is, to hitch the rope round the flight of the clapper to facilitate his work below ; in this way the clapper is pulled athwart the *ground truck*, the rope gets chafed, and the clapper is damaged in the crown staple ; but what is worse, some how or other the bells get "slat." This occurred at Canterbury a few years ago, when the cathedral being under repair, the bells were not rung out ; but to make a joyous sound on festival occasions the bells were "clocked," or clappered, and in this way two of them were broken and had to be recast. Sir E. Beckett, in his clever lecture on Church Building, (p. 271) has given good advice on this very point : "Whenever bells are occasionally clappered, care should be taken to put some separate pulleys in front of the middle of each bell, with a separate and thinner rope to the clapper, and so arranged that the ringer cannot hold it against the bell, for I believe more bells are cracked by tying the ropes to the clapper, than by all other means whatever."

The 2nd, 3rd, 4th, and 5th plates explain themselves.

The 6th is kindly lent by Messrs. Warner. It represents a bell "tucked up" in the stock. This tucking up varies, according to the size and weight of a bell ; in small bells it is not required, and is among the "*secrets*" of bell hanging, as upon it depends the striking of the clapper in proper time,

and the rising of the bell in due course. Here is also shown the slider for the stay working on a sweep piece, which is an improvement.*

The other plate illustrates my contrivance for chiming.

It often happens that in the course of years, the constant battering of the heavy clapper in one place, makes a pit on the sound bow; the bell is no doubt weakened, and the sound may be affected. The usual mode of cure is to *turn* the *bell*, or *quarter* it, so that the clapper may strike on another place; this obliges the insertion of a new crown-staple, or altering the hanging of the clapper, which every bell-hanger knows how to do.

With a view of obviating the supposed difficulty of this operation (which after all is very trifling in the hands of a good workman), a plan has been proposed by Sir Edward Beckett and Mr. Baker, by which a bell may be shifted round less than a quarter. it is very doubtful whether the mode proposed would not in *practice* require more hands than the old way: time will decide this point.

It is said that the *mushroom button* or *flange*, as shown in the bells for the Westminster clock, is stronger than the old-fashioned canons, which are often defective. That may be; but even if all the canons should be broken off, a bell may be suspended and fastened to the stock by nuts and bolts passed through the head of the bell, taking care to insert a block of wood, of the required thickness, so that the bell may hang at the same distance below the centre of the gudgeon as it did before. Holes may be bored

* The curve may be taken from the outer edge of the wheel.

in the head of a bell, without fear of damage to the sound.

In conclusion, and by way of advice, I would repeat, that rules for ringers should be as short and simple as possible. Though, in dealing with such persons, the advice of a heathen is to be borne in mind: "*Ne tu cede malis sed contra audentior ito,*" yet the words of Solomon must not be forgotten: "Go not forth hastily to strive, lest thou know not what to do in the end thereof."*

* Prov. xxv, 8.

POSTSCRIPT

TO

THE THIRD EDITION.

Since the former edition was issued, it is most gratifying to know that in many parishes a great reform has taken place in Belfries, and that a number of Clergymen are turning their attention to the subject, and take their place in the Belfry among the ringers. I have myself had the pleasure of ringing with several Clergymen.

In this edition I have added a new Plate (VIII) for the purpose of showing my plan for preventing the continual wearing out, and consequent breaking of the bell rope at the "Fillet" marked 6 in Plate III, where the rope in ringing doubles back at every pull.

I call it "*an open mouth fillet*," retaining the old name,* with two rounded lips, A A, Fig. 1, between which the rope is passed, and fastened to the upright spokes. By this means the rope is not worn a bit more than if it worked over a pulley, and it will remain good for many years. In the engraving a portion of the "*shrouding*" of the wheel is removed to shew the two *lips*.

Where the sole of the wheel is cut away, its strength is maintained by covering the whole of that part with wider shrouding, as may be seen at D.

The engraving also shows another contrivance, which

* Originally this fillet was nothing more than a bit of string tied there to effect the back pull ; in several places it is called the Ribbon.

I call a "*hooked cleat*" (C C), made of round iron, and bolted to the upright spokes. (See Fig. 2.) With this appendage, a bell rope may be easily taken up or let down in a moment, by giving the rope one or two or more turns round the hook or the cleat end, as circumstances may require : and by this means the trouble of casting off the whole fastening of the rope for taking up or letting down is avoided.

There is also shown a mode of tightening the bond at the end of the bell stock, which often gets loose, and requires wedges to be driven in, otherwise the gudgeon might get loose. By making the bond in the form of a horse shoe, with nuts and screws and a plate over, it may be easily tightened at any time.

I would take this opportunity of adding the following extracts from letters, which from time to time I have received from respectable persons who have for years devoted much of their time and attention to ringing as a science and an amusement. They tend to show that where it is taken up out of love for the thing, and a desire to be useful, it may be followed without damage to health or morals, and that it is quite a mistake to suppose that it *necessarily* leads to drinking and other low habits; not a jot more so than becoming a member of a madrigal society or a cricket club, in which various grades of society in these days unite so happily together. It is only by such a union that we can hope to restore the belfry to a state of respectability, and so by degrees cast out the low characters.

First, then, with regard to rules, one writes thus :—

"Rules are very necessary to conduct a band of ringers generally, but not so much so when the Clergyman himself takes an interest in the ringers, and the ringing of the bells. Coarse language, drinking, and smoking, are the chief things to be put down, for they are not only a great evil, but things totally at variance with the mind in acquiring and practising the real art of change-ringing. It is a very mistaken idea that ringing is labour, or that it requires more refreshment than a musician beating a big-drum in an orchestra. To wit, myself; I am not a strong man, and

only just recovered from three months' illness, caused by sitting too much at my desk, and over-anxiety in my business; now I rang the 5th bell in a peal of 5040 Grand-sire Triples on Thursday last at —— (three hours). All the refreshment I took or required was a glass of ale before and after the peal, and the other ringers in like manner."

Another experienced ringer, a respectable tradesman, writes thus:—

"I have much pleasure in forwarding to you my opinion on the practice of scientific ringing on church bells, trusting it will help the advance and gradual perfection of an art deserving the consideration of a higher class of society, and remove any incumbrance to its progress. Speaking with an experience of sixteen years (during which I have taken part in some of the greatest performances ever achieved by any society), I can safely assert that it will be found a healthy exercise, and afford much innocent and intellectual amusement for the employment of leisure hours, and will invigorate and exalt the mind much more so than the depressing excitement of profane mirth and intoxicating liquors, a practice too often indulged in by labouring men who have followed ringing not as an amusement, but as a profession, that they may procure the means of gratifying their desires for dissipation and vice, which has been a great drawback to this noble science. But to show that excessive drinking can be and is avoided by societies who follow ringing for both mental and bodily exercise, in the whole of the extraordinary performances in which I have taken part (which have varied in number of changes from 5,000 to 7,524, in some of the most difficult methods, and in time from three to six successive hours, according to the number of changes and weight of bells,) I have never in one instance known one of the performers get the worse for liquor; thus showing that those who acquire the greatest scientific attainment are exceptions to the class of persons so often found among ringers in towns where they are sometimes composed wholly of the working classes."

Another writes thus:—

"I have rung in several peals, such as Steadman's, Caters, Treble Bob, and one of each Superlative Surprise, and Norwich Court Bob, and was in the long peal of 8448, on the memorable 10th of April, 1848, at S. Matthew's, Bethnal Green. I never drink anything but tea, coffee, and water, being what is termed an abstainer from all intoxicating drinks for about twenty years. I have followed ringing from my infancy, though there are very many superior performers to myself in London."

To the above may be added an extract from a letter I received a few days ago from a gentleman in the North, who has lately become a ringer. He speaks in raptures of the science and pleasure of change ringing, but deploras the drunkenness which sometimes disgraces the ringer who is *paid* for a wedding peal, or other joyous event, and in conclusion he says:—

"All endeavours to improve the morality of the belfry must promote the improvement and diffusion of good change ringing. The main source of dissipation is the money obtained for ringing at weddings. I think it would be a great improvement if the fees paid on such occasions were collected by the church authorities into a permanent fund for the maintenance of ringing, instead of being given directly to the ringers."

"Spero meliora."

H. T. E.

Easter, 1871.

POSTSCRIPT
TO
THE FOURTH EDITION.

I wish to add a few remarks on the Hanging of Church Bells, and the Vibration of Bell Towers, extracted from my paper read before the Exeter Diocesan Architectural Society, 22 September, 1862.

“Notwithstanding what has been urged by myself and others in other places, on the great danger of allowing the bell-frame or cage to touch the walls of the tower, I believe that the danger is overrated. But if there be any, it arises solely from the *wedging* against walls; and from the forcible and alternate hammerings of the frame, if it gets unsteady: although, if the cage can be set *several inches* or feet away from the wall, whether it gets rickety or not, little damage can arise, though the ringers would have the harder work. But if, of necessity, the cage is fixed within an inch or less of the walls, and it gets rickety and full of life during the ringing, battering away, first one side, and then the other, the danger is most imminent; and if *wedges* are inserted by an unskilful workman, the evil is increased by the downward and expanding tendency of the wedge. In such a case, I am free to confess, that pieces of timber fixed to the cage and *butted square* and *hard* up against the walls, so that cage and bells may all oscillate together in one compact body (like as a person in a rolling boat would try to keep himself steady by taking tight hold of the sides) little or no danger will occur to the tower; *provided the walls are of thick and substantial masonry*; but if they are flimsily built, and the

bells are hung high up, and in a high cage, the vibration of the tower would be so great, that in some mysterious way, the bell cage gets so affected, that it is found from experience a difficult thing to keep the bells up when ringing, to say nothing of the damage done to everything in connection; therefore, in such a case, the cage must be kept clear of the side walls. After all, do what you will, it is perhaps impossible to prevent the vibration of a tower, unless it is constructed with deep-faced buttresses on all sides, therefore, great care should be taken that the vibrations be not checked; but that they oscillate steadily like a pendulum. Scientific men have not yet determined how much the vibrations are caused by the soniferous waves from the sound of the bells, as well as by their motion.

Bell-hangers may say, that if the bells are made to swing at right angles to each other, one will counteract the other, and the cage will be kept steady; but I am certain that it is not the case. The cage may be a little stiffer from the cross-bracings which it involves; but it is contrary to all mechanical principles for two forces acting at right angles to neutralize each other at all. The only way for bells to swing and counteract each other is, by making them all swing in directions opposite to one another; that would be, all North and South—or all East and West, according as the tower may be buttressed, and then the bells would be pulled to follow each other *oppositely*; but this would only be in round-ringing; for when bells go off into *changes*, then it may be that all the bells, just for one blow, would swing the same way, though the direction of their motion would be changed by the very next pull. I have seen several old towers (Lympstone is one, and the bells badly hung) in which the timbers are so abutted without wedging, and no damage done, and the tower is not a low one. It is so at Bitton, my old parish; and in this tower of Clyst S. George, all the original timbers were hard up against the walls—indeed, there was evidence, from the pinning—that the old cage was set up before the walls were raised, and that they were built close against it.”

P.S.—It is now more than twelve years since the above remarks were made, therefore my judgment ought to be more matured—be that as it may, during that time I have visited about six hundred towers—in many of which I found the upper bell-timbers walled in, and wedges applied in many cases; but I have not found any instance of a tower being damaged thereby, *provided the masonry was sound and substantial.*

Very lately I was in the noble tower of L'Abbaye Aux-hommes, at Caen, during the swinging (I cannot call it ringing—the bells being worked by the foot without wheel and rope) of two heavy bells for service; the cage of massive timbers was insulated, but the motion was so great as to produce the sensation of sea sickness to one of my companions, and the oscillation of the lofty tower with its glorious spire was greater than I ever before witnessed, but without any apparent damage.

Therefore, after very mature consideration, I have come to this conclusion—that it is not at all unsafe nor damaging to the tower—and better for the ringers, that the cage should be BUTTED HARD AND TIGHT against the walls, and as the vibration or rocking of a tower cannot be prevented—no harm whatever will arise from the same, provided there are no defects in the walls from old settlement or other cause, and that the whole building is of compact and solid masonry; the elasticity in such a building is so extraordinary, whether a tower, spire, or even a bridge,* that it is sufficient to counteract the disintegration of the materials of which it is composed. Substantially the same opinion is expressed in Sir E. Beckett's Treatise on Clocks and Bells, p. 363, of 6th

* A new bridge at Langholm, N.B., was shaking owing to an unusually high flood. Telford, who lived near, was sent for—his reply to the builder's wife, who was alarmed for the consequences, was "Never you mind Tibby—there's no fear o' the brig: I like it a'the better that it shakes—it proves its weel put thegither." The bridge has stood the furious shakes of nearly a century uninjured.—See SMILES'S LIVES, vol. ii. p. 302, under *Telford*.

Edition, and it is the opinion of the most experienced bell hangers.

Well-constructed towers vibrate from the very basement. At Abingdon, Berks, there is a spur stone against the tower, and when the bells are ringing, boys amuse themselves by putting their knives between the stone and the tower, to be pinched as the vibrations go on.

It is better not to pin any of the tenons of the cage, but to bolt the whole cage down to the beams below: in this way the bolts may be screwed tighter from time to time as the case may require: the bolts had better be put in bracingly, that is, not perpendicularly.

H.T.E.

Midsummer, 1878.

RULES IN DOGGEREL VERSE

Were very common a century and more ago. The following is a fair specimen :—

He that in ringing takes delight,
And to this place draws near,
These Articles, set in his sight,
Must keep if he rings here.

The first he must observe with care,
Who comes within the door,
Must, if he chance to curse or swear,
Pay SIXPENCE to the poor.

And whosoe'er a noise does make,
Or idle story tells,
Must SIXPENCE to the ringers take,
For mending of the Bells.

If any like to smoke or drink,
They must not do so here :
Good reason why—just let them think
This is God's House of Prayer.

Young men that come to see and try,
And do not ringing use,
Must SIXPENCE give the company,
And that shall them excuse.

He that his hat on's head does keep,
Within this sacred place,
Must pay his SIXPENCE ere he sleep,
Or turn out with disgrace.

If any one with spurs to's heels,
 Rings here at any time,
 He must for breaking Articles
 Pay SIXPENCE for his crime.

If any overthrow a Bell,
 As that by chance he may ;
 Because he minds not ringing well,
 He must his SIXPENCE pay.

Or if a noble-minded man
 Comes here to ring a Bell,
 A SHILLING is the Sexton's fee,
 Who keeps the Church so well.

If boys or men swing in the ropes
 Or tread them on the floor,
 Each one must TWOPENCE pay for that
 Or else be turned to door.

And when a ringer sets his Bell,
 And when his peal is o'er,
 The rope he must hank up it well
 Or pence must forfeit FOUR.

If any at our Parson sneer,
 Or Wardens' rules deride,
 It is a rule of old, most clear,
 That such shan't here abide.

The Sabbath day we wish to keep,
 And come to Church to pray :
 The man who breaks this ancient rule,
 Shall never share our pay.

And ringers all should say or sing,
 When bells are down and cease,
 " May God preserve the Church and King,
 And guide us Home in peace."

SCALE OF RINGS.

Messrs. Warner have kindly supplied the following scale of several Rings shewing the Note and Diameter of each Bell, and the Weight (subject to slight variation).

These tables will be found very useful to Clergymen and Churchwardens who contemplate any new work in their Belfries.

RINGS OF FOUR BELLS.

No.	Diam.	Note.	Cwt. qrs. lb.	No.	Diam.	Note.	Cwt. qrs. lb.
1.	27	E \flat	4 0 0	1.	31	D	6 0 0
2.	28	D	5 0 0	2.	32	C \sharp	6 2 0
3.	30	C	6 0 0	3.	34	B	7 0 0
4.	32	B \flat	6 2 0	4.	36 $\frac{1}{2}$	A	9 0 0
Total weight			21 2 0	Total weight			28 2 0
1.	32	C	6 2 0	1.	34 $\frac{1}{2}$	B	7 0 0
2.	34	B	7 2 0	2.	36	A \sharp	8 0 0
3.	36 $\frac{1}{2}$	A	9 0 0	3.	38 $\frac{1}{2}$	G \sharp	11 2 0
4.	40	G	12 0 0	4.	45	F \sharp	15 0 0
Total weight			35 0 0	Total weight			41 2 0

FIVE BELLS.

No.	Diam.	Note.	Cwt. qrs. lb.	No.	Diam.	Note.	Cwt. qrs. lb.
1.	26	F	3 3 0	1.	31	D	6 0 0
2.	27	E \flat	4 0 0	2.	32	C	6 2 0
3.	28	D	5 0 0	3.	34	B	7 2 0
4.	30	C	6 0 0	4.	36 $\frac{1}{2}$	A	9 0 0
5.	32	B \flat	6 2 0	5.	40	G	12 0 0
Total weight			25 1 0	Total weight			41 0 0

FIVE BELLS—*continued.*

No.	Diam.	Note.	Cwt. qrs. lb.	No.	Diam.	Note.	Cwt. qrs. lb.
1.	29½	E	4 0 0	1.	32	C#	6 0 0
2.	31	D	5 0 0	2.	34½	B	7 0 0
3.	32	C#	6 0 0	3.	36	A#	8 0 0
4.	34	B	7 0 0	4.	38½	G#	11 2 0
5.	36½	A	9 0 0	5.	45	F#	15 0 0
Total weight			31 0 0	Total weight			47 2 0

SIX BELLS.

No.	Diam.	Note.	Cwt. qrs. lb.	No.	Diam.	Note.	Cwt. qrs. lb.
1.	28	F	5 0 0	1.	32	C#	6 2 0
2.	29	D#	5 0 0	2.	34½	B	8 0 0
3.	30½	C#	6 0 0	3.	36½	A	9 0 0
4.	32	C	6 2 0	4.	38½	G#	11 2 0
5.	35	A#	8 2 0	5.	42½	F#	14 0 0
6.	38	G#	10 2 0	6.	47	E	18 0 0
Total weight			41 2 0	Total weight			67 0 0
1.	28	E	5 0 0	1.	30¼	E	6 2 13
2.	29	D	5 0 0	2.	31½	D	7 0 16
3.	31	C	6 1 0	3.	32½	C	7 1 6
4.	33	B	7 2 0	4.	35	B	8 2 18
5.	36	A	8 2 0	5.	37	A	9 3 17
6.	40	G	12 0 0	6.	40	G	12 0 0
Total weight			44 1 0	Total weight			51 2 14
1.	30	D	6 0 0	1.	28	E	5 0 0
2.	32	C	7 0 0	2.	29	D	5 0 0
3.	34	B ₂	8 0 0	3.	31	C	6 1 0
4.	36½	A	9 0 0	4.	33	B	7 2 0
5.	40	G	12 0 0	5.	36	A	8 2 0
6.	45	F	15 0 0	6.	40	G	12 0 0
Total weight			57 0 0	Total weight			44 1 0

EIGHT BELLS.

No.	Diam.	Note.	Cwt. qrs. lb.	No.	Diam.	Note.	Cwt. qrs. lb.
1.	28	F	5 0 0	1.	30	E	5 2 0
2.	29	E	5 2 0	2.	30	D \sharp	6 0 0
3.	30 $\frac{1}{2}$	D	6 0 0	3.	33	C \sharp	7 0 0
4.	32	C	6 2 0	4.	35 $\frac{1}{2}$	B	8 2 0
5.	35	B \sharp	8 0 0	5.	38	A	10 2 0
6.	36	A	8 2 0	6.	39 $\frac{1}{2}$	G \sharp	12 0 0
7.	39	G	11 0 0	7.	43	F \sharp	15 0 0
8.	43	F	14 2 0	8.	47	E	20 0 0
Total weight			65 0 0	Total weight			84 2 0

DONCASTER PEAL.

1.	29	F	5 2 0	1.	31	E \flat	6 2 5
2.	30	E	6 0 0	2.	32	D	7 0 11
3.	31 $\frac{1}{2}$	D	6 2 0	3.	34	C	8 0 10
4.	33	C	7 0 0	4.	37	B \flat	9 0 0
5.	35 $\frac{1}{2}$	B \sharp	8 0 0	5.	41	A \flat	13 0 0
6.	36 $\frac{1}{2}$	A	9 0 0	6.	43	G	15 1 10
7.	40	G	12 0 0	7.	48	F	21 0 24
8.	44	F	15 0 0	8.	54	E \flat	30 1 0
Total weight			68 0 0	Total weight			110 2 4

TEN BELLS.

No.	Diam.	Note.	Cwt. qrs. lb.	No.	Diam.	Note.	Cwt. qrs. lb.
1.	—	F \sharp	6 0 0	1.	—	E	7 2 0
2.	—	E	6 3 0	2.	—	D	8 1 0
3.	—	D	7 2 0	3.	—	C	9 0 0
4.	—	C \sharp	8 0 0	4.	—	B	10 0 0
5.	—	B	9 0 0	5.	—	A	12 0 0
6.	—	A	11 0 0	6.	—	G	16 0 0
7.	—	G	14 0 0	7.	—	F	20 0 0
8.	—	F \sharp	17 0 0	8.	—	E	24 0 0
9.	—	E	22 0 0	9.	—	D	30 0 0
10.	—	D	30 0 0	10.	—	C	40 0 0
Total weight			131 5 0	Total weight			176 3 0

ST. MARY LE BOW, LONDON, 1762.

No.	Diam.	Note.	Cwt. qrs. lb.	No.	Diam.	Note.	Cwt. qrs. lb.
1.	32 $\frac{1}{2}$	E	8 3 7	6.	44	G	16 0 4
2.	34	D	9 1 5	7.	48 $\frac{1}{2}$	F	21 0 23
3.	36	C	10 0 0	8.	51 $\frac{1}{2}$	E	26 0 13
4.	38 $\frac{1}{2}$	B	12 0 7	9.	57 $\frac{1}{2}$	D	34 2 6
5.	41	A	13 2 22	10.	64 $\frac{1}{2}$	C	53 0 25

TWELVE BELLS.

ST. SAVIOUR'S, SOUTHWARK.

No.	Diam.	Note.	Cwt. qrs. lb.	No.	Diam.	Note.	Cwt. qrs. lb.
1.	30	F	7 1 10	7.	43	G	13 2 4
2.	32	E	7 3 20	8.	45	F	17 1 21
3.	32	D	7 3 0	9.	47	E	19 0 21
4.	34	C	9 0 10	10.	51	D	25 3 21
5.	37	B	10 0 14	11.	58	C	34 1 2
6.	42	A	11 0 16	12.	66	B	51 2 0

ST. MARTIN'S, BIRMINGHAM.

No.	Diam.	Note.	Cwt. qrs. lb.	No.	Diam.	Note.	Cwt. qrs. lb.
1.	28	G	6 0 14	7.	37	A	9 3 12
2.	29	F	6 1 0	8.	40	G	11 3 6
3.	30 $\frac{1}{2}$	E	6 2 10	9.	44	F	15 1 17
4.	32	D	6 3 2	10.	46	E	17 3 12
5.	33 $\frac{1}{2}$	C	8 0 20	11.	52	D	25 2 3
6.	35	B	8 2 12	12.	58	C	35 0 0

SCALE OF SINGLE BELLS.

Diam.	Note.	Cwt. qrs. lb.	Diam.	Note.	Cwt. qrs. lb.
12	—	0 1 16	35	B	8 2 15
13	—	0 2 0	36	A \sharp	9 0 19
14	—	0 2 12	37	A \sharp	9 1 20
15	—	0 3 8	38	G \sharp	10 0 9
16	—	1 0 12	39	G	11 0 7
17	—	1 1 4	40	G	12 2 3
18	—	1 2 0	41	G \sharp	13 3 26
19	A \sharp	1 3 0	42	F \sharp	13 2 1
20	A \sharp	1 3 19	43	F	14 1 16
21	A	2 1 22	44	F	15 1 18
22	G \sharp	2 2 6	45	F \sharp	15 3 14
23	G	2 2 11	46	E	17 3 4
24	F \sharp	3 0 2	47	E	20 0 0
25	F	3 2 3	48	F	21 0 24
26	E	4 0 0	49	E	21 2 0
28	E \flat	4 3 8	50	E	22 0 0
29	E \flat	5 1 24	51	E	23 0 0
30	C \sharp	5 2 22	52	D \sharp	25 0 0
31	C	5 3 17	53	D	28 0 0
32	B	6 1 10	54	E \flat	30 1 0
33	C	7 2 5	59	C \flat	34 2 8
34	B	7 3 20	64 $\frac{1}{2}$	B	52 0 23

SCALE OF BELLS, BY SIR ED. BECKETT, BART.

Thickness, 1-13 diameter.

Diam.	Note.	Cwt. qrs. lb.	Diam.	Note.	Cwt. qrs. lb.
64	C	53 0 0	43	G	15 0 0
60	D \flat	42 0 0	40 $\frac{1}{2}$	A \flat	12 2 0
57	D	36 0 0	38 $\frac{1}{2}$	A	11 0 0
54	E \flat	30 0 0	36	B \flat	9 0 0
51	E	26 0 0	34 $\frac{1}{2}$	B	8 0 0
48	F	21 0 0	32	C	6 3 0
45	G \flat	18 0 0			

BELL-HANGING.

COPY of a Letter from the Rev. Henry Thomas Ellacombe, M.A., Oxon., F.A.S., Rector of Clyst S. George, Devon, and Contributing Visitor; read at the Ordinary General Meeting of the Royal Institute of British Architects, held on Monday, the 4th January, 1864; containing information relative to Bell-ringing, &c.—in reference to the Paper on Newland Church, by W. White, Fellow, read at the Ordinary General Meeting, held on Monday, the 30th November, 1863.

“ To John W. Papworth, Esq., F.R.I.B.A.

“ DEAR SIR,—I have been very much interested in your discussion with Mr. White, about the Bell-ringers' place, after his very able though somewhat pertinacious paper on Newland Church, as reported in the Sessional Papers of the Institute, Part I, No. 3, pp. 40, 41, of the present Session. I have long contended for bringing the ringers down, *ad pavimentum et in conspectu ecclesiæ*; they and churchwardens may make difficulties, but there are few, if any, but what may be got over by consulting those who know how to make the arrangement. Here we have a very beautiful western Doom by Hardman, after Giotto's design, and the ropes and guides *do not at all damage the view*. The guides are iron bars, 1 inch square, opened where required to embrace a $2\frac{1}{2}$ galvanised *thimble*; one end is let into the wall, the other screwed against the opposite side. The 20 feet noticed by Mr. Christian as the length of the pull must be a

mistake for the distance from the floor to the first guide. I think Mr. Denison gives 16 feet, but here the distance is 18 feet from the pavement to the first guide, and (46 feet 9 inches, say) 47 feet from the pavement to the top of the wheel of the tenor, and 53 feet to the top of the wheel of our Albert Memorial bell, for that is hung above the others. There is no difficulty whatever in the *pull*; I speak from experience, for I ring generally once a week. I enclose a copy of a paper of mine on Bells, published in the *Ecclesiologist* last year, in which I allude to the point at issue: and a paper by 'A Cantab. M.A.' in the last *Ecclesiologist*.

"With all respect for the professional members of the Institute, I would beg leave to suggest that architects in general would do well to avoid having anything whatever to do with the arrangement of the bells, or procuring them, or hanging them: all they should do is to take care that a substantial oak floor of 2 inch stuff (to be laid, *when required*, on beams and joists of the same material of substantial scantling, not less than 8 inches square for joists, and 12 inches for any beams, the ends to rest on corbels, or, what is better, on a set off of 10 or 12 inches all round) be provided for the bell chamber, such as will be found in all old towers; and it would be better not to arrange the timbers, nor consequently lay the flooring planks, until the bell-hanger has been consulted as to the size and exact spot he will require the trap to be left; there, wherever it may be, one or two trimmers will be required. I would almost defy any architect being able to do credit to his abilities, or any general contractor to carry out honestly the requirements, without a previous consultation and understanding with the bell-hanger; by so doing both parties will get rid of a deal of worry, which percentage and profit will barely counterbalance, and the employers will be better satisfied. In bell-hanging, so much has to be done *pro re natâ*, that it is often most difficult to foresee all the details connected with the setting up and completing a peal

of bells (and the more so if there are chimes and a clock to contend with;) all that should be left to the bell-founder, or bell-hanger, as the case may be, for different parties may be employed; and either is the proper party to construct the cage for the bells, independent of the general contractors. It seems to me that an architect and a builder might just as well design and manufacture the steam engine and power looms, or other machinery to be set up in a mill they had constructed, though they would of course have taken instruction beforehand from their employer or the mechanician as to requirements.

“In modern towers the general complaint is, that the bell chamber is not sufficiently capacious, though the very object of a tower is for the purpose of receiving a peal of bells; therefore that (capaciousness) is a point that the architect should insist upon carrying out. It is a great mistake to suppose that bells may be hung one above another, and squeezed in anyhow: they *may* be, it is true, but not with any satisfaction to those who have to pay the cost, nor without great inconvenience, and increase of expense, and very great danger to the permanent stability of the building. Another complaint I have heard is, that in modern towers the ringing floor is often placed close under the bells; and that, in some, the stone staircase is carried up close to the bell chamber, taking up a large portion of the area required *inside* for the bells: it is far better to stop the staircase at the lower floor, and thence have a ladder leading to the bell chamber floor, entering one of the pits of the cage.

“In the tower of this church, the walls of which are 3 feet thick at the bell chamber, 11 feet by 10 feet 6 inches, and 5 feet at the base, 9 feet by 8 feet, we have six bells all well hung, and in a substantial new cage of oak. The ropes of three pass through the very heart of the clock, in metal tubes, and one of the ropes is conducted to the floor through a trunk as crooked as a long *f*, and inclining as much in the other

direction; to do that was the work of a mechanic, and such as no architect or building contractor should have anything to do with.

“Will you do me the favour to lay these remarks before your next meeting; experience in the subject of over half a century induces me perhaps to make them with the more pertinacity and freedom of speech; but they are made with genuine Christmas goodwill to all, and I trust will be received in the like spirit, and oblige

“Yours obediently,

“H. T. ELLACOMBE, M.A. OXON., F.A.S.

“Rectory, Clyst St. George,

“Topsham, Devon.

“*S. Thomas's Day*, 1863.

“P.S.—I have three or four towers in my eye in the remarks I have made; in one every timber fixed by the architect for the bell work had to be hacked and cut away; in another the whole had to be removed.

“When I took out the old cage here, there was proof enough, by the *pinning*, that the cage was fixed before the walls were raised; but in those mediæval days they rarely had more than three bells in parish churches; it is the increase of number of bells that makes the arrangement more complicated. In Gloucester Cathedral there is proof that even the stone groining of the tower ceiling was not executed (finished) till after the bells were raised to their chamber; and so I say timbers should not be fixed till all about the bells is settled. Towers are for bells, and therefore their requirements are to be uppermost in the mind of the architect, and therefore plenty of room and strength should be provided, as well as plenty of opening for sound.”

PLATE I.

From "MERSENNUS DE HARMONICIS," *Lib.* iv.

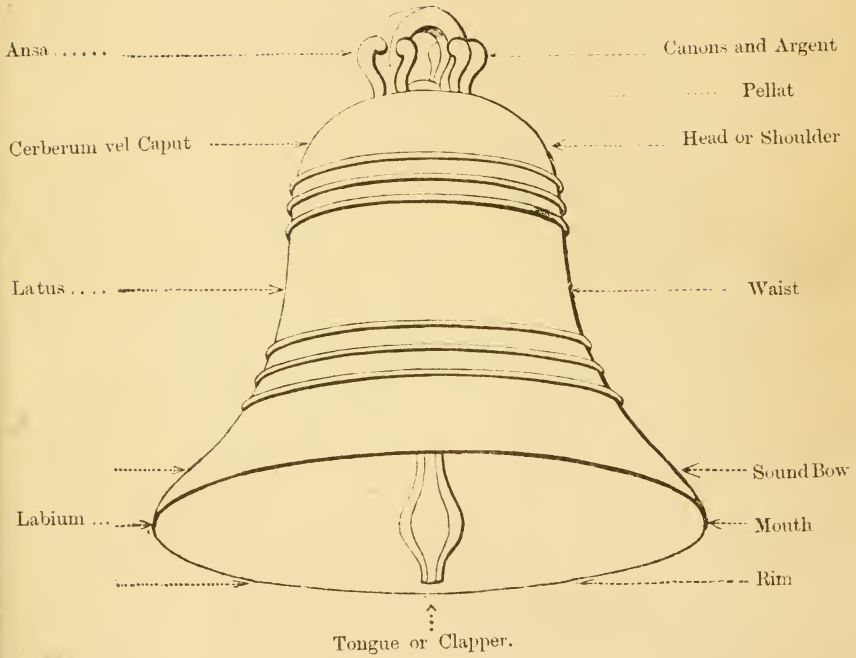
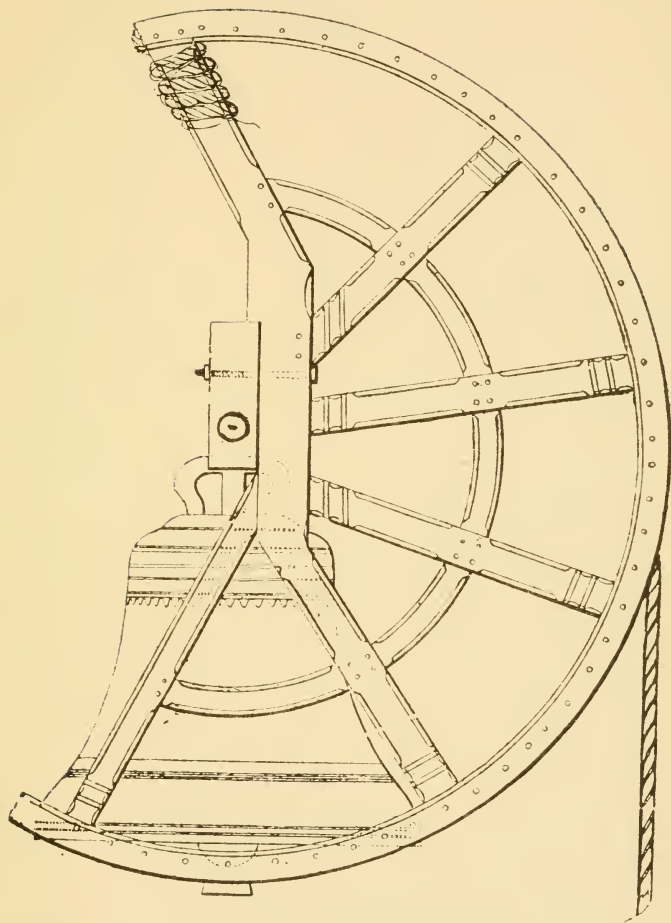
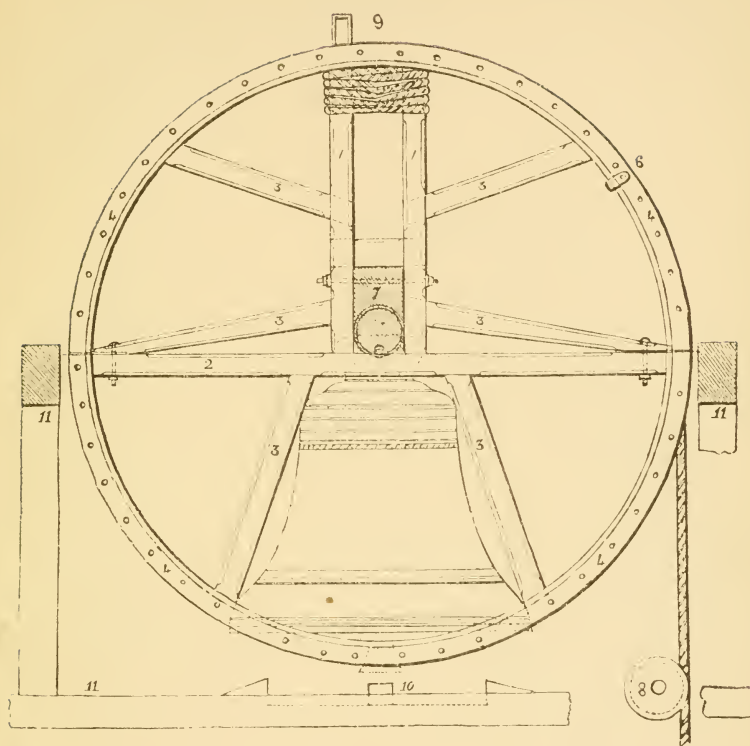


PLATE II.



Bell-wheel at Dunchideock, Devon, shewing the old
HALF-WHEEL beautifully moulded.

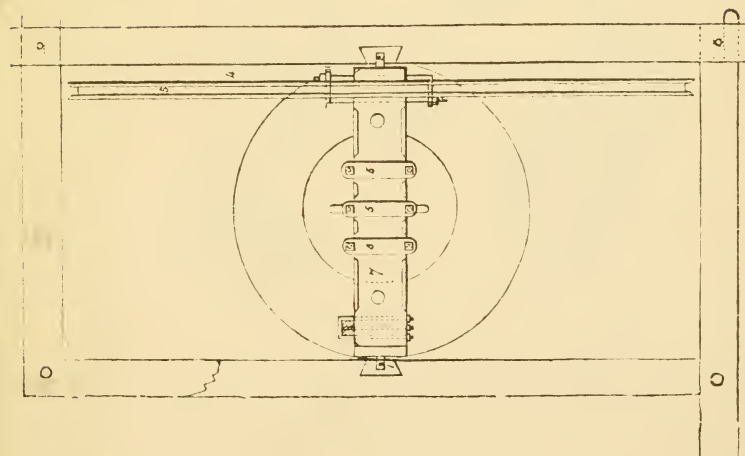
PLATE III.



WHEEL.

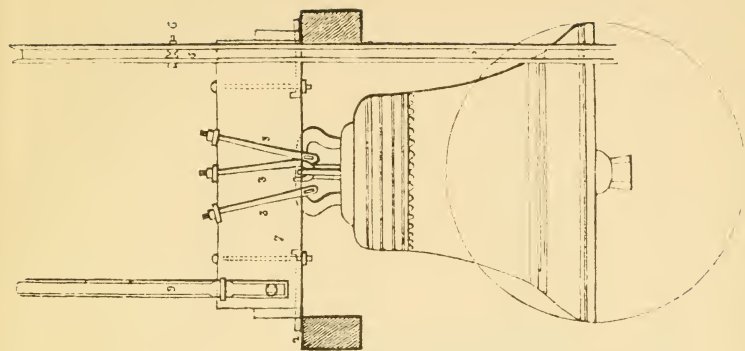
1. Upright Spokes.
2. Transom or Long Rail.
3. Arms or Spokes.
4. Shrouding.
5. Sole of Wheel—see Plan, Plate V.
6. Fillet—see Elevation, Plate V.
7. Head-stock.
8. Ground-truck
9. Stay.
10. Catch or Slider.
11. Timbers of Cage.

1. Brasses.
2. Gudgeons.
3. Straps.
4. Dogs or Gibs.
5. Coupling-plates.
6. Clapper, with mode of hanging.
7. Crown or Argent staple inside the Bell.
8. Iron Hoop at end of Stock.
9. Fillet-strap and Screw-pin.



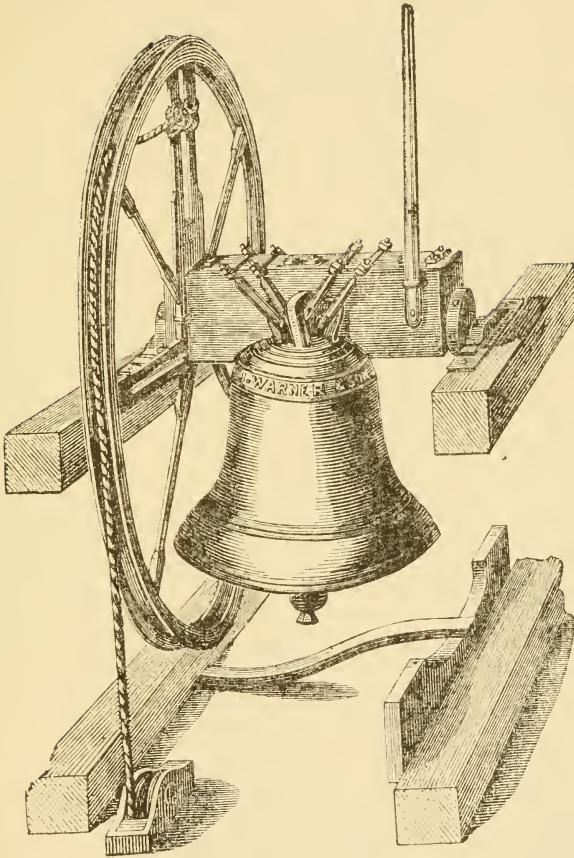
Plan of Head-stock, looking down on Bell.

PLATE V.



Elevation of Bell and Stock.

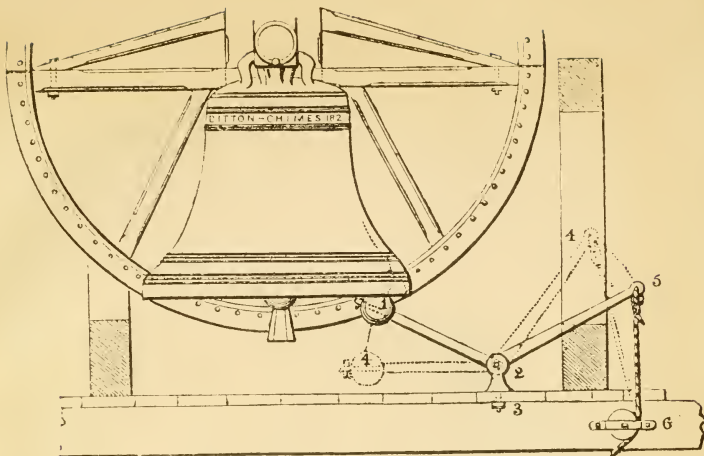
PLATE VI.



This shows, in perspective, the present method of hanging a Church Bell,
with stock, stay, slider, wheel, pulley and rope, either.
as a single bell or in ring.



PLATE VII.



1. Ball of Cast Iron
- 2 and 3. Iron Checks.
4. Position of Hammer or Ball at rest.
5. Ditto, when tied down below, for chiming.
6. Pulley under the floor.
7. Pulleys fixed at different angles
8. Nest of Pulleys of wood
9. Fixed Bar of wood or iron.

Author's original contrivance for Chiming.

Side view.

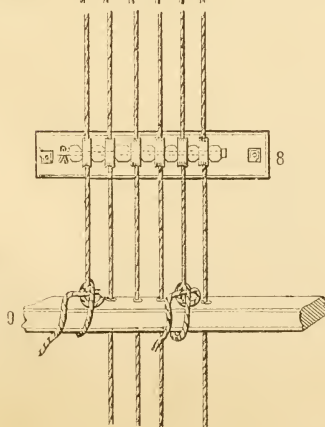
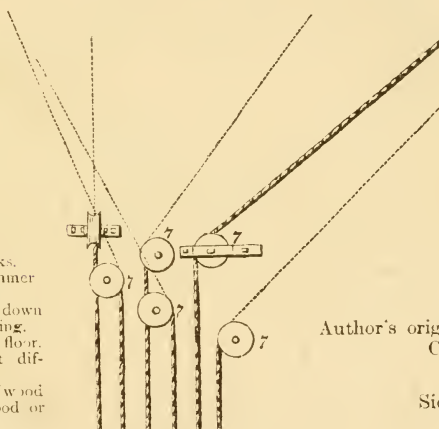




PLATE VIII.

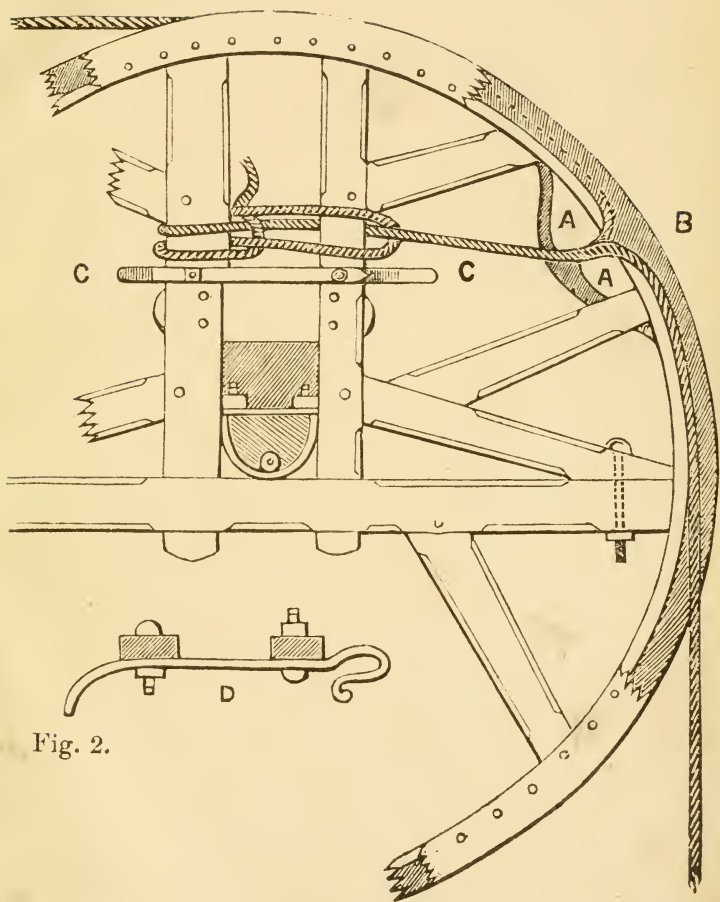
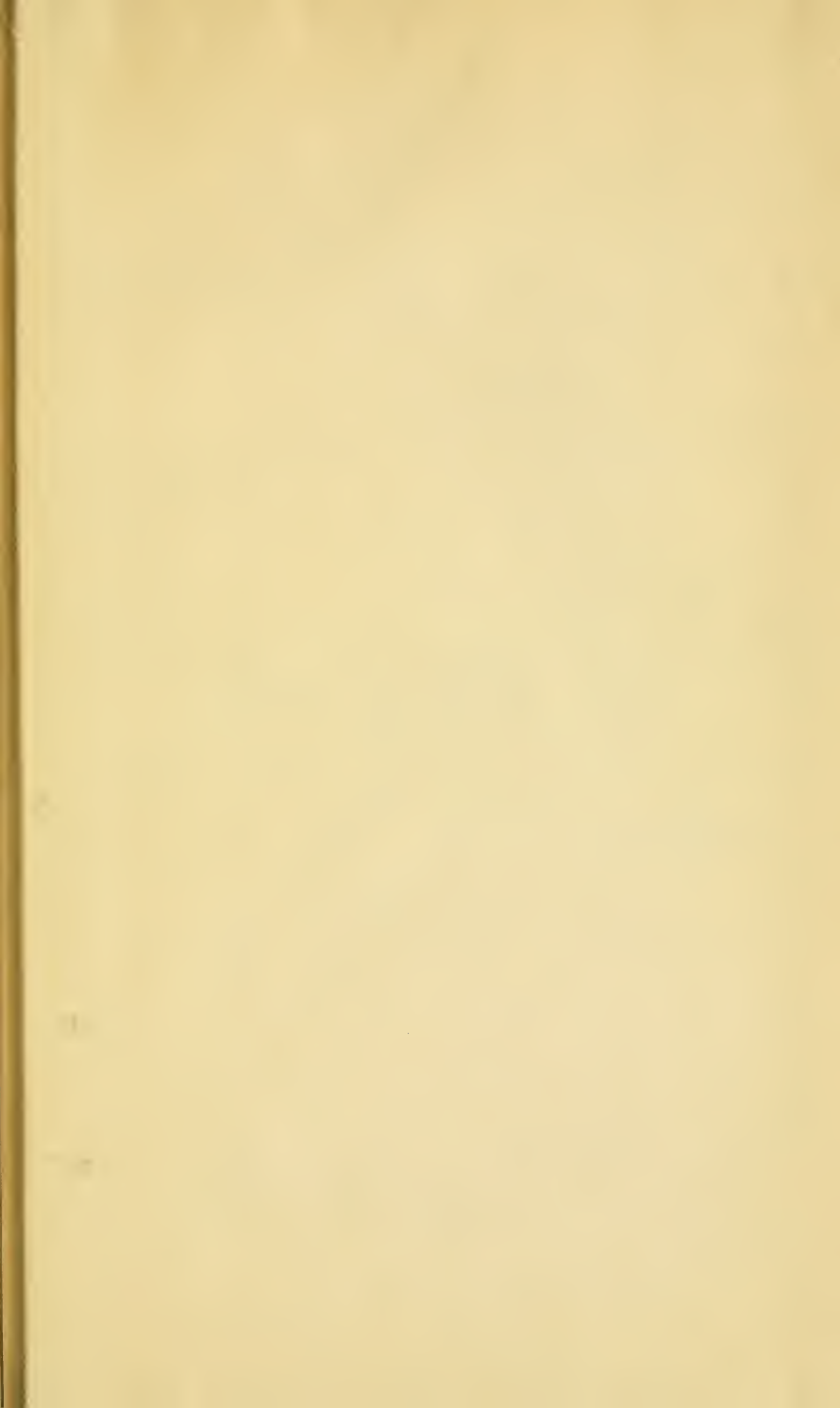


Fig. 2.

Open Mouth Fillet with Two Lips.

f





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Practical remarks on
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